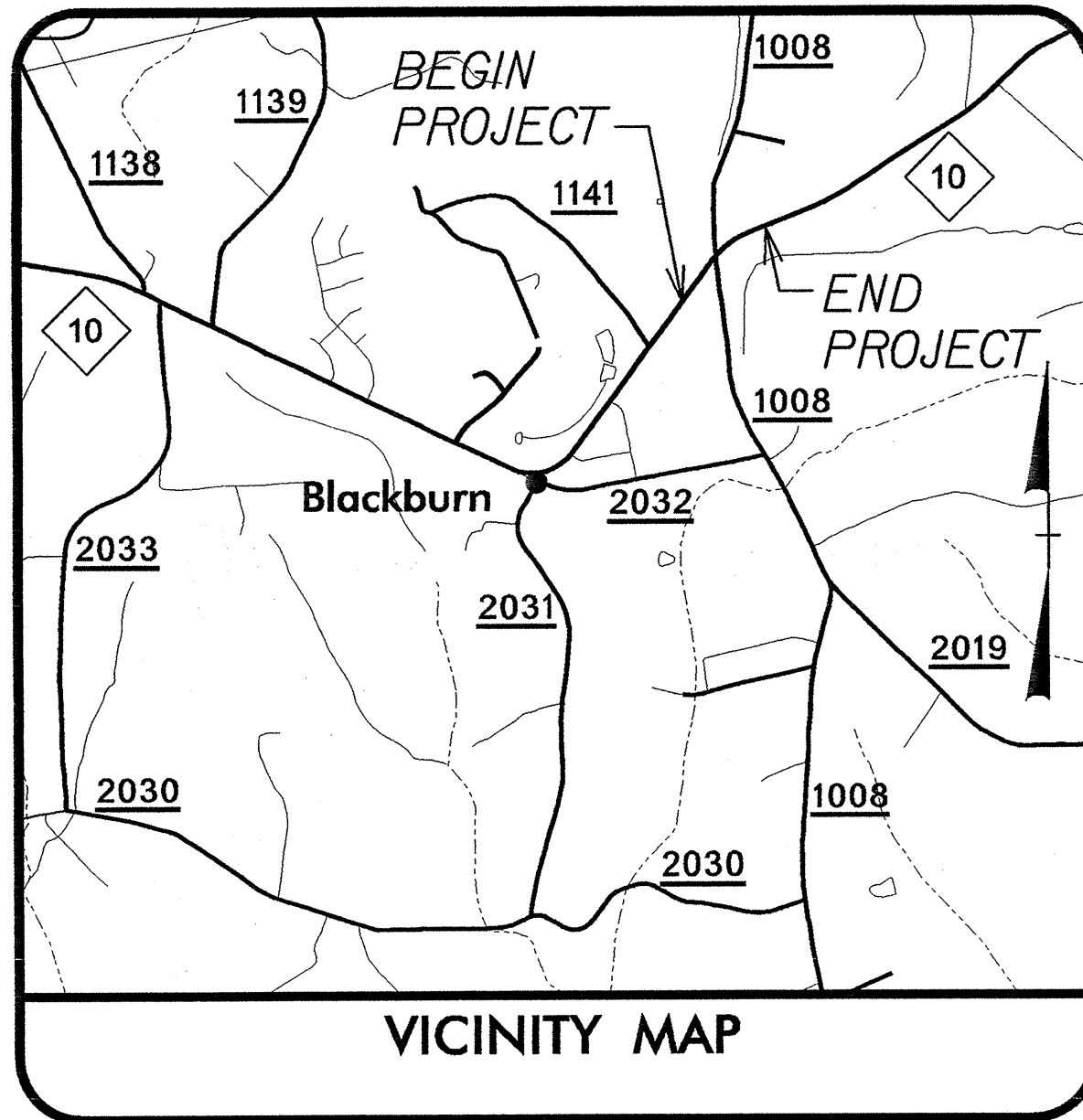


09/08/09

PROJECT: MAI2042R-B

WBS #: 37897

See Sheet 1-A For Index of Sheets

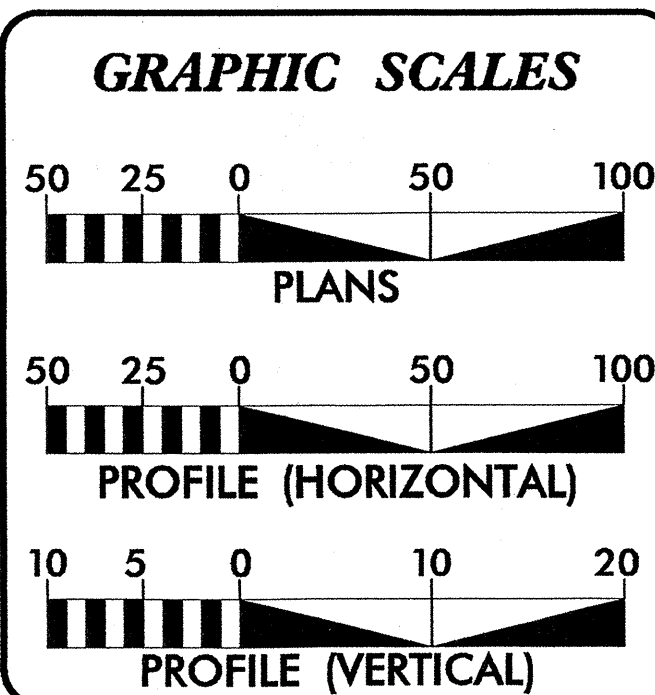
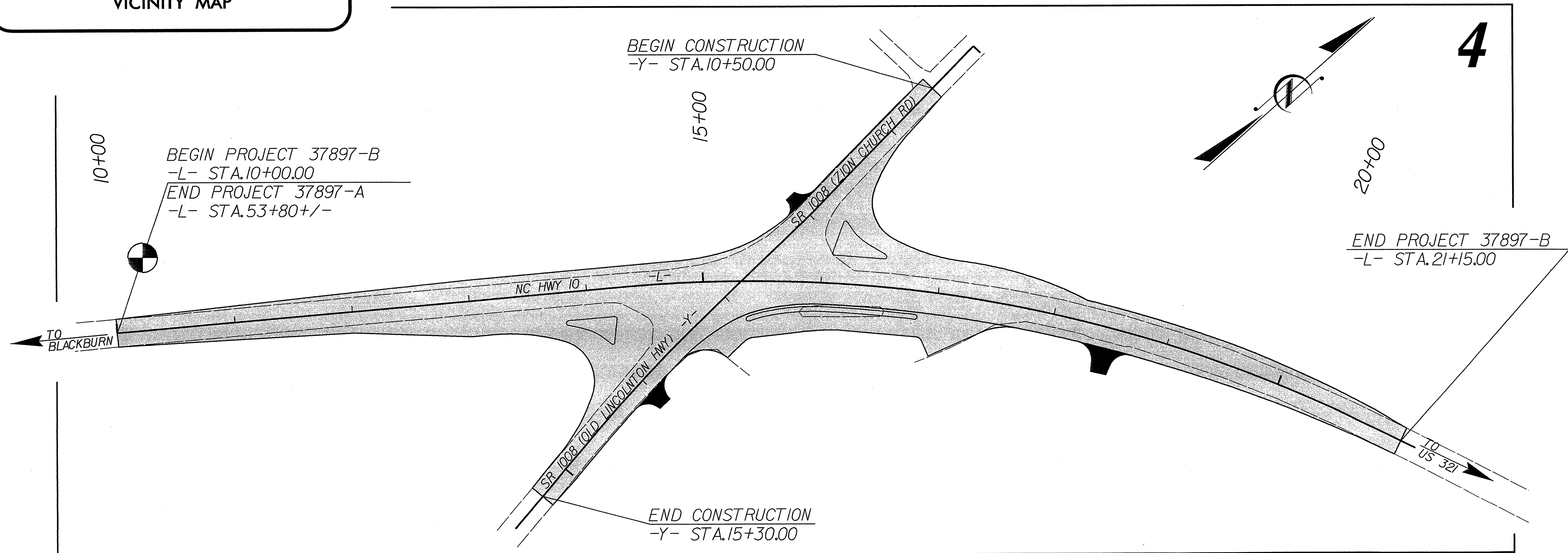


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CATAWBA COUNTY

LOCATION: INTERSECTION OF NC HIGHWAY 10 AND SR 1008
TYPE OF WORK: GRADING, DRAINAGE, AND PAVING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	37897-B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
37897		PE,RW,FINAL	



DESIGN DATA

Vd = 50 MPH

FUNCTIONAL CLASS = LOCAL

* DESIGN EXCEPTION REQUIRED FOR VERT. CURVATURE AND VERT. SSD

PROJECT LENGTH

LENGTH ROADWAY PROJECT MAI2042R-B = 0.211 MI

Plans Prepared By:
TGS ENGINEERS
SUITE 141
975 WALNUT STREET
CARY, NC 27511
PH (919) 319-8850

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 2007

LETTING DATE:
January 15, 2008

Plans Prepared for:
NCDOT DIVISION 12
NCDOT Contact:
GARY R. SPANGLER
DIVISION PROJECT MANAGER

CHARLES L. FLOWE, PE
PROJECT ENGINEER

BOBBY C. HOUSER, PE
PROJECT DESIGN ENGINEER

ROADWAY DESIGN ENGINEER

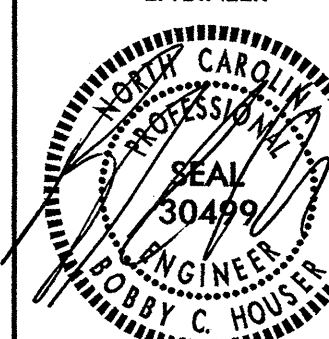
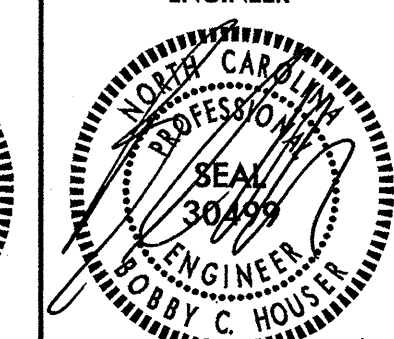
SIGNATURE: *Bobby C. Houser* 10/11/07

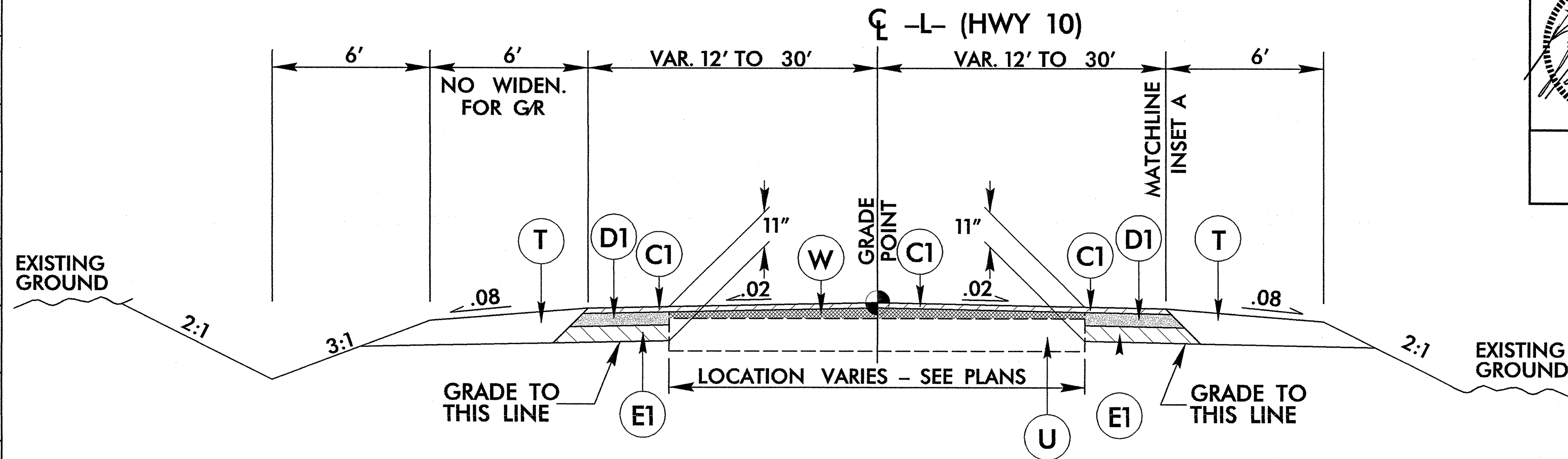
\$\$\$\$\$SYTIME\$\$\$\$\$DGN\$\$\$\$\$USERNAME\$\$\$\$\$

6/2/99

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 4" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
R	MONOLITHIC CONCRETE ISLAND
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING.

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

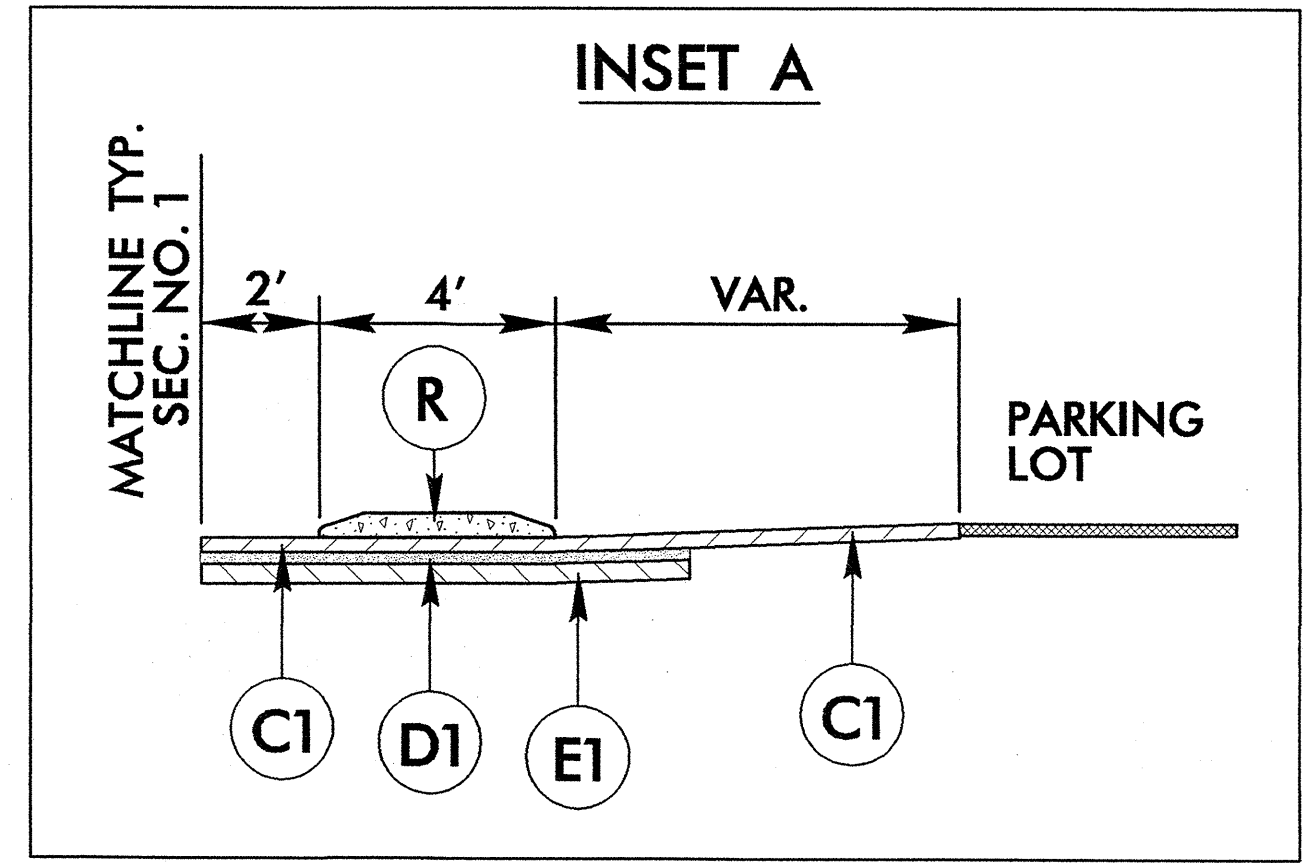
PROJECT REFERENCE NO. 37897-B	SHEET NO. 2
ROADWAY DESIGN ENGINEER TGS ENGINEERS 10/11/07	PAVEMENT DESIGN ENGINEER TGS ENGINEERS 10/11/07
 	
TGS ENGINEERS SUITE 141 975 WALNUT STREET CARY, NC 27511 PH (919) 319-8850	



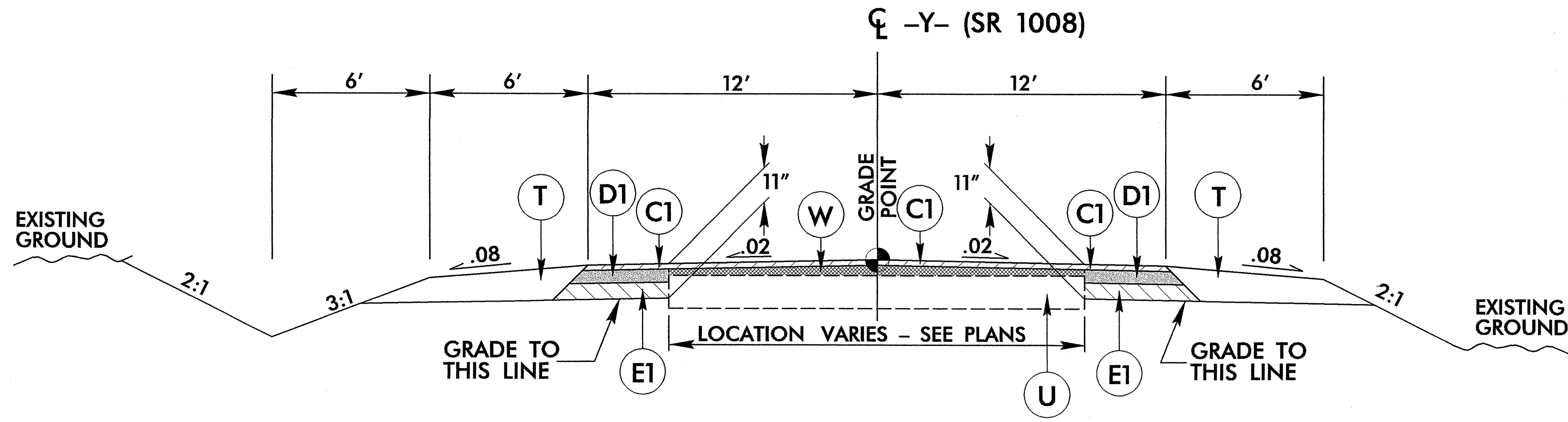
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AS FOLLOWS:
 -L- STA. 10+30.00 TO 20+85.00

NOTES:
 TRANSITION FROM EXISTING TO TYPICAL NO.1 FROM -L- STA. 10+00.00 TO 10+30.00 AND FROM 20+85.00 TO 21+15.00



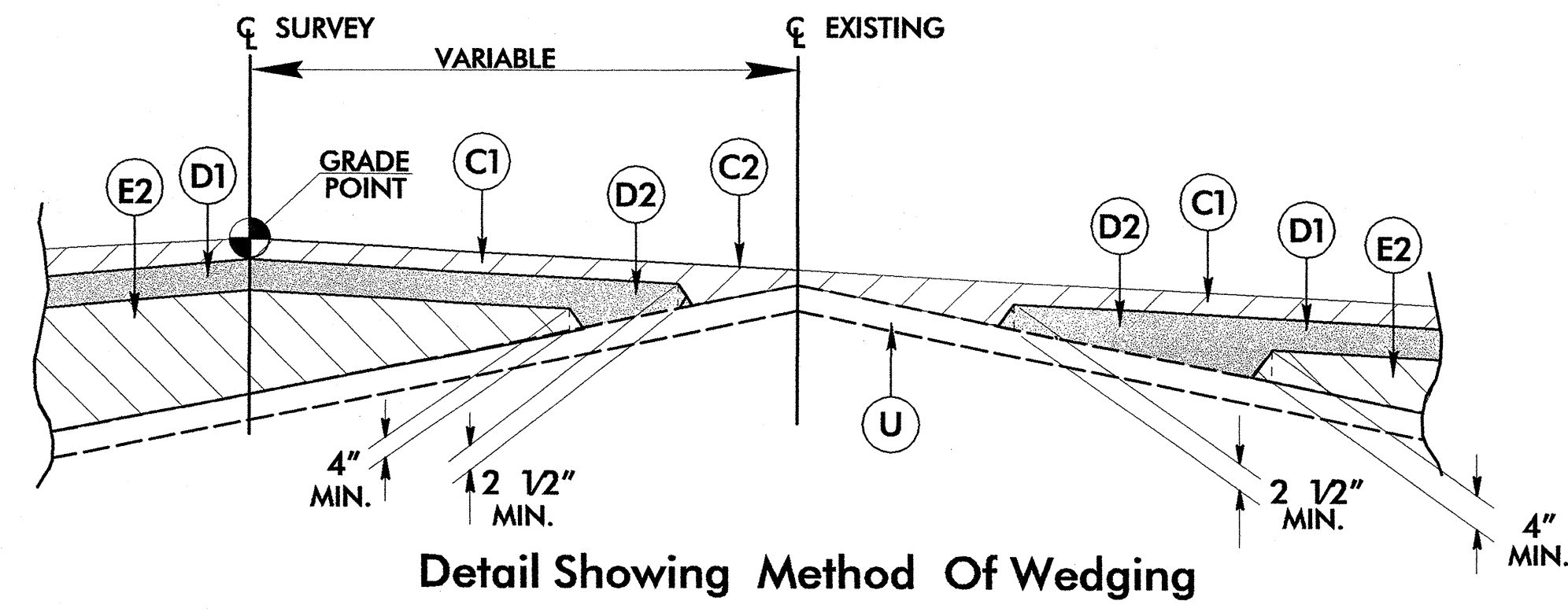
USE INSET 'A' AS FOLLOWS:
 -L- STA. 15+36.41 RT TO 16+84.33 RT



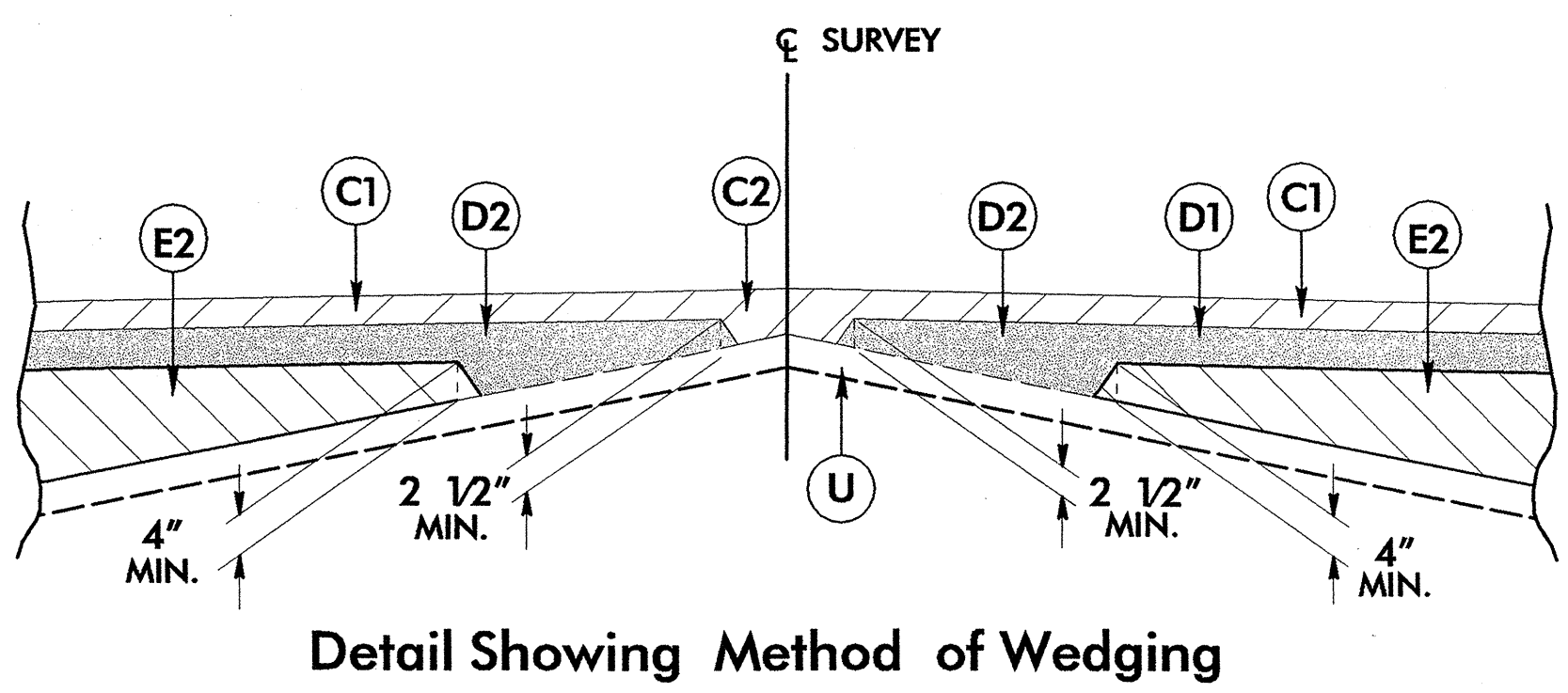
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS:
 -Y- STA. 10+80.00 TO 12+54.80
 -Y- STA. 13+07.08 TO 15+00.00

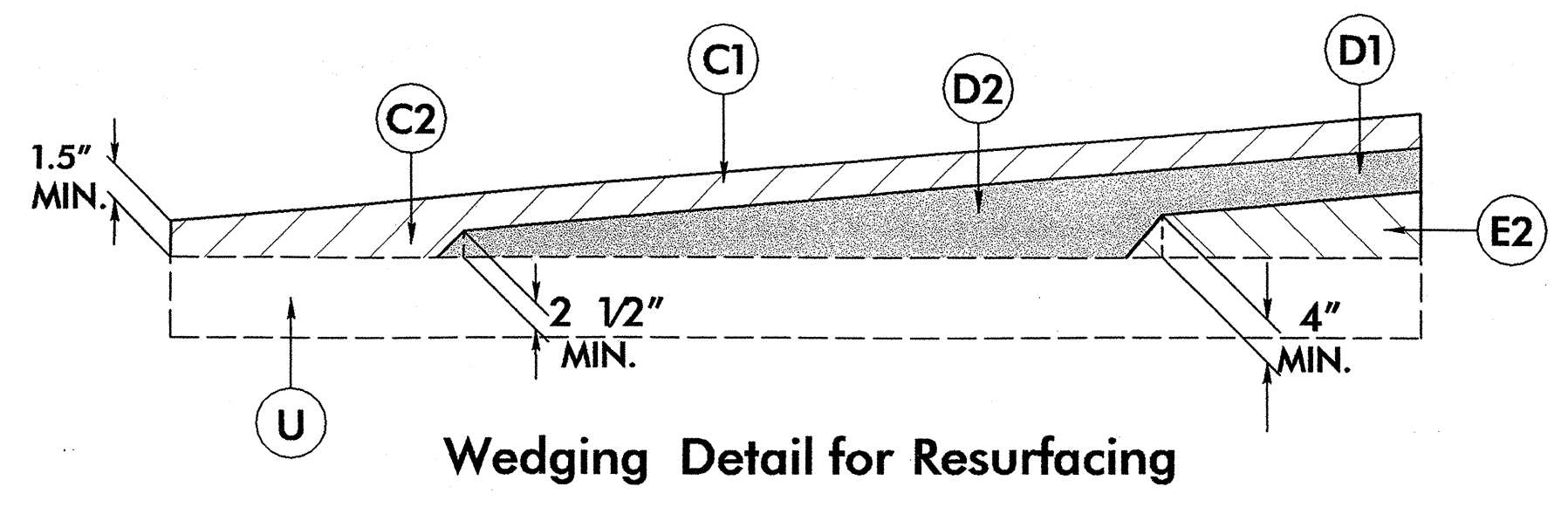
NOTES:
 TRANSITION FROM EXISTING TO TYPICAL NO.2 FROM -Y- STA. 10+50.00 TO 10+80.00 AND FROM 15+00.00 TO 15+30.00



Detail Showing Method Of Wedging



Detail Showing Method of Wedging



Wedging Detail for Resurfacing

SYSTEMS ENGINEERING
 CONSULTING
 INC.
 10000
 WILSON
 ROAD
 SUITE 100
 WILSON
 NC 27515
 (919) 234-1100
 FAX (919) 234-1101
 WWW.TGS-ENGINEERS.COM

COMPUTED BY: JLT DATE: 1-29-2007
 CHECKED BY: DATE:

PROJECT NO. SHEET NO.
 37897-B 3-A

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

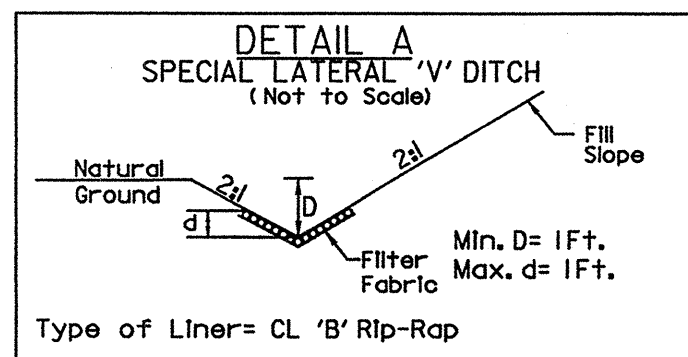
SUMMARY OF EARTHWORK

Line	Station	Station	Uncl. Excav.	Undercut Excav.	Embank. +%	Borrow	Waste
-L-	10+00.00	21+15.00	551		1,033	482	
-Y-	10+50.00	12+54.80	198		73	0	125
INTERSECTION							
-Y-	13+07.08	15+30.00	34		17	0	17
TOTALS:			783		1,123	482	142
Loss Due to Clearing and Grubbing			-39			39	
Earth Waste to Replace Borrow						-142	-142
Estimated Shoulder Material					399	399	
TOTALS:			743		1,522	779	
Est. 5% to Replace Topsoil on Borrow Pit						39	
PART B TOTALS:			743		1,522	818	
TOKEN UNDERCUT:				100			
SAY:			820	100		860	
PART A TOTALS:			3,338	100	2,651	0	687
PROJECT TOTALS:			4,081	200	4,173	818	687
PROJECT SAY:			4,490	200		860	760

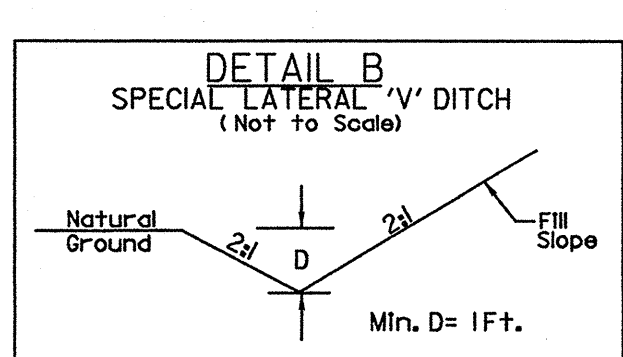
*NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL

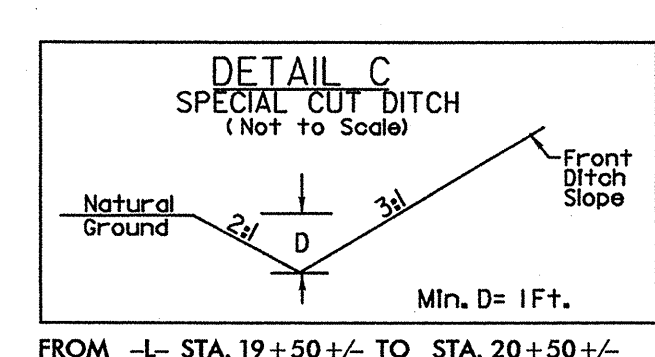
Line	Station	Station	Location LT/RT/CL	SY
-L-	15+36	16+85	RT	252.49
PART B TOTAL:				252.49
PART B SAY:				265
PART A TOTAL:				2028.83
PROJECT TOTAL:				2281.32
PROJECT SAY:				2395.00



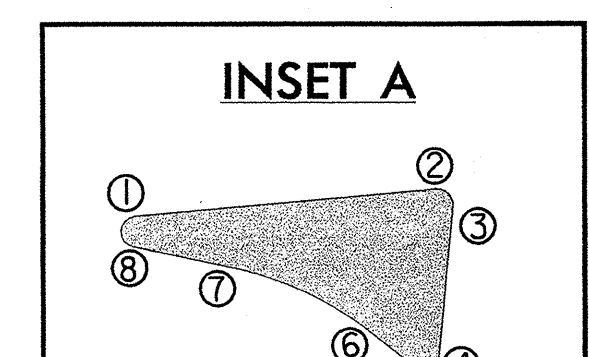
FROM -L- STA. 11+00+/- TO STA. 11+66+/-
EST. CL. 'B' RIP RAP = 23 TONS
EST. FILTER FABRIC = 69 SY



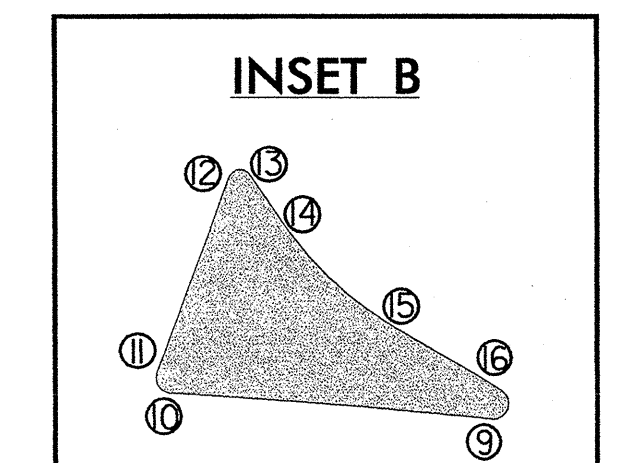
FROM -L- STA. 11+66+/- TO STA. 13+50+/-
FROM -L- STA. 16+65+/- TO STA. 19+00+/-



FROM -L- STA. 19+50+/- TO STA. 20+50+/-



POINT	-L- STATION	OFFSET	RADIUS BETWEEN
1	13+82.39	24' RT	-
2	14+21.76	24' RT	2'
3	14+23.73	26.37' RT	-
4	14+19.99	46.53' RT	1.5'
5	14+17.48	47.34' RT	-
6	14+11.76	41.88' RT	43.52'
7	13+94.31	31.70' RT	-
8	13+81.81	27.92' RT	2'



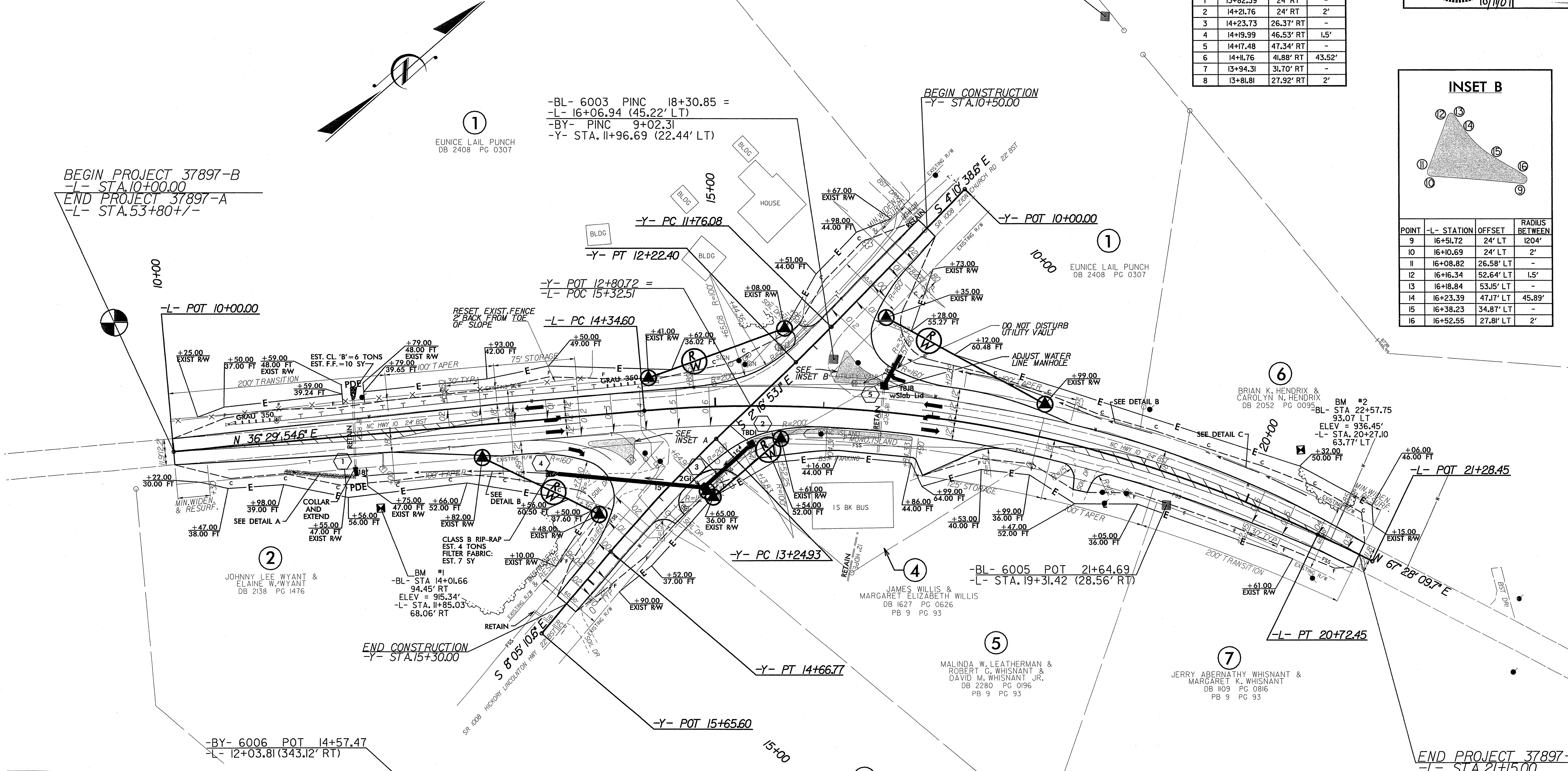
POINT	-L- STATION	OFFSET	RADIUS BETWEEN
9	16+51.72	24' LT	1204'
10	16+10.69	24' LT	2'
11	16+08.82	26.58' LT	-
12	16+16.34	52.64' LT	1.5'
13	16+18.84	53.15' LT	-
14	16+23.39	47.17' LT	45.89'
15	16+38.23	34.87' LT	-
16	16+52.55	27.81' LT	2'

JOHNNY ANDREW PUNCH SR
DB 1576 PG 0364

-BY- 6004 POT 5+00.00
-L- STA. 17+81.38 (391.41' LT)

-BL- 6003 PINC 18+30.85 =
-L- 16+06.94 (45.22' LT)
-BY- PINC 9+02.31
-Y- STA. 11+96.69 (22.44' LT)

BEGIN PROJECT 37897-B
-L- STA. 10+00.00
END PROJECT 37897-A
-L- STA. 53+80+/-



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "BL-1001" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 687,411.0956(ft) EASTING: 1,306,933.0292(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99984979 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-1001" TO -L- STATION 10+00.00 IS N 50° 57' 23" E 3716.45 FT ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

-L-	-Y-	-Y-
PI Sta 17+61.52	PI Sta 11+99.24	PI Sta 13+95.91
$\Delta = 30' 58' 15.1''$ (RT)	$\Delta = 1' 53' 45.5''$ (RT)	$\Delta = 5' 48' 17.5''$ (LT)
D = 4' 51' 20.1"	D = 4' 05' 33.2"	D = 4' 05' 33.2"
L = 637.84'	L = 46.33'	L = 141.84'
T = 326.92'	T = 23.17'	T = 70.98'
R = 1,180.00'	R = 1,400.00'	R = 1,400.00'
SE = 0.06	SE = 0.02	SE = 0.02

ALL STORM DRAIN PIPES SHALL BE REINFORCED CONCRETE PIPE UNLESS OTHERWISE NOTED.

SEE SHEET 5 FOR -L- AND -Y- GRADE

REVISIONS

8/17/99

5/28/99

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 14.5	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 15	CFS
DESIGN HW ELEVATION	= 911.50	FT
100 YEAR DISCHARGE	= 24	CFS
100 YEAR HW ELEVATION	= 916.00	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 26+	CFS
OVERTOPPING ELEVATION	= 916.89	FT

BM #1 ELEVATION = 915.34
N 689860 E 1309984
RR SPIKE IN BASE OF 48" POPLAR
L- STA. 11+85.03 (68.06' RT)

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 5	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 11	CFS
DESIGN HW ELEVATION	= 922.33	FT
100 YEAR DISCHARGE	= 15	CFS
100 YEAR HW ELEVATION	= 923.00	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 20+/-	CFS
OVERTOPPING ELEVATION	= 925.8	FT

BM #2 ELEVATION = 936.45
N 690529 E 1310506
RR SPIKE IN BASE OF 24" WHITE PINE
L- STA. 20+27.10 (63.77' LT)

PROJECT REFERENCE NO.	37897-B	SHEET NO.	5
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

